



AN ALLETE COMPANY

YOUR ELECTRICITY. YOUR CHOICE.

Fuel Sources • Air Emissions • Costs

2024

Electric Service Costs

Minnesota Power charges customers for the costs of providing electric service, including investments in power plants, transmission and distribution lines, and operating and maintaining Minnesota Power's electric system.

The 2023 Component Cost table shows average percentages of monthly service costs related to the generation, transmission and distribution of electricity for four major customer categories:

Residential	Household and farm usage;
Commercial	Small to medium service industries and manufacturing businesses;
Industrial	Large manufacturing and processing facilities; and
Lighting	Outdoor, area, street and highway lighting.

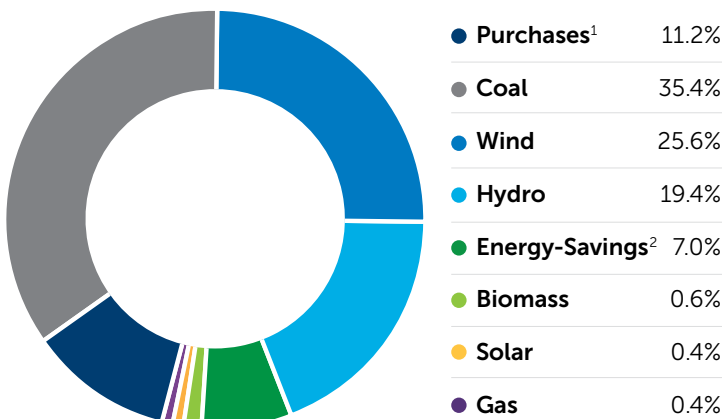
The average percentages are calculated by dividing Minnesota Power's total cost to provide electric service among the generation, transmission and distribution components.

2023 Component Cost by Customer Category

	Residential	Commercial	Industrial	Lighting
GENERATION	53%	63%	86%	25%
TRANSMISSION	9%	20%	14%	4%
DISTRIBUTION	38%	17%	0%	71%
TOTAL	100%	100%	100%	100%

Your monthly bill also displays a pie chart showing the average percentages for your specific customer category. Individual monthly percentages may vary from the average.

How Your Electricity Needs Are Met



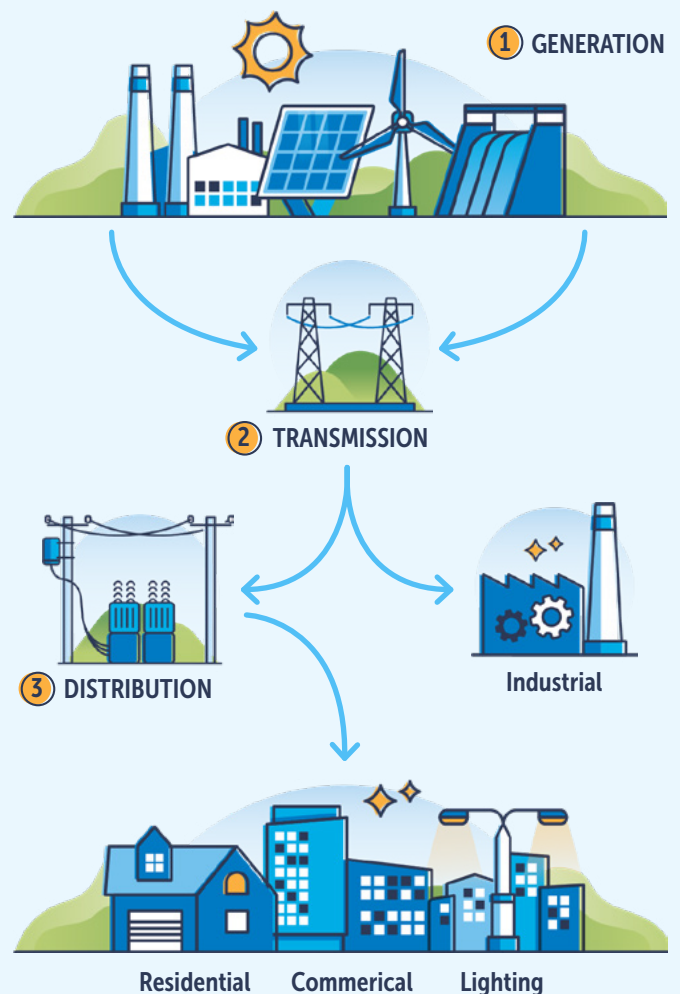
¹Represents Purchases that have an "unknown" fuel designation.

²Represents first year energy savings for 2023 and savings still in effect from measures implemented during the preceding 9 years.

The data represented in the chart is an average of the generation serving customers from 1/1/23-12/31/23. At the end of 2020, when additional renewable energy projects became operational, Minnesota Power reached a power supply portfolio that is approximately 50% renewable.

Components of an Electric System

Fuels used to generate electricity have different costs, reliability and air emissions. You can help the environment by using electricity more efficiently.



1. GENERATION

Utilities produce electricity at power plants by burning fuels (such as coal, natural gas, oil, and biomass fuels like wood) and by operating hydroelectric and wind facilities. Utilities also purchase electricity from other utilities or power suppliers.

2. TRANSMISSION

High-voltage electricity travels from power plants along transmission lines to distribution substations and directly to industrial customers.

3. DISTRIBUTION

At distribution substations, the voltage is reduced and low-voltage electricity is delivered to customers. The amount of electricity is metered to measure customer usage levels.

Air Emissions by Fuel Type

For the year ending December 31, 2023

MEASURED IN
POUNDS PER MWh

	Carbon Dioxide	Nitrogen Oxides	Sulfur Dioxide	Particulate Matter	Mercury ¹
PURCHASES	917	0.696	0.713	0.056	0.00000622
COAL	2,081	0.970	0.248	0.146	0.00000614
NATURAL GAS	1,557	1.318	0.039	0.006	0.00000000
BIOMASS²	4,145	6.449	0.688	0.472	0.00007506

¹Approximately 0.17 to 3.11 percent of your total monthly electric bill represents Minnesota Power's capital and operation costs to control mercury emissions at Boswell Unit 3 and Boswell Unit 4.

²Biomass CO₂ emissions attributable to combined heat and power resource.

Wind and solar power produce none of these air emissions. Large hydro power may alter ecosystems and cultural resources depending upon the location and design of the facility. Nuclear energy does not produce these air emissions but does produce both high- and low-level nuclear waste.

How Air Emissions Affect the Environment

- Carbon Dioxide** The principal greenhouse gas linked global warming.
- Nitrogen Oxides and Sulfur Dioxide** Contribute to acid rain; Nitrogen oxides also contribute to smog.
- Particulate Matter** Sometimes called soot; contributes to asthma attacks and other respiratory illnesses.
- Mercury** Accumulates in some fish to levels exceeding current health department guidelines.

The Minnesota Pollution Control Agency is responsible for ensuring that emissions from utilities meet air quality standards for nitrogen oxides, sulfur oxide and smog.

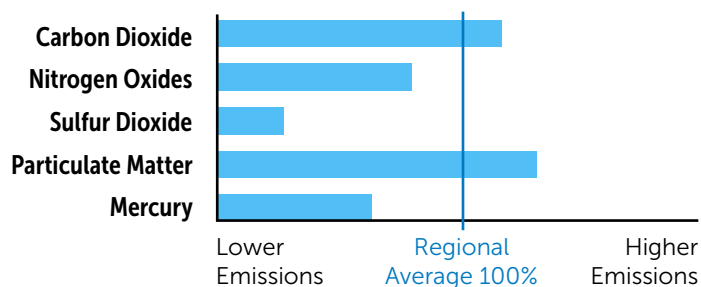
How Coal-Fired Plants Are Doing

Statewide, coal-fired power plants in Minnesota generate 34 percent of all sulfur dioxide pollution, 17 percent of all carbon dioxide pollution, 7.5 percent of all mercury pollution and 4.7 percent of all nitrogen oxides pollution^{1,2}. All other generation sources contribute a small amount of pollution.

¹Pollution is emitted from other sources such as industrial and commercial sources, cars, trucks and home heating.

How Minnesota Power is Doing

Compared to MPCA Regional Average Emissions²



²Most recent MPCA data provided to MPUC April 24, 2024.

ALLETE calculates and reports carbon emissions based on the GHG Protocol. Please see our [Corporate Sustainability Report](#) for details.

Renewable Choices

With our Renewable Source, Community Solar Garden and Solar Sense programs, you can choose how much of the energy you purchase comes from renewable sources and directly influence the amount of renewable energy on the power grid.

To learn more about our renewable energy programs, visit mnpower.com/RenewableChoices.

How Customer Conservation Helps

Minnesota Power's customer energy conservation programs have reduced our need to generate electricity by 721,411,970 kWh in 2023, a 6.7 percent savings. These savings resulted from both new and ongoing customer participation in Minnesota Power's energy conservation programs. This equates to a reduction in air emissions of:

Carbon Dioxide	Nitrogen Oxides	Sulfur Dioxide	Particulate Matter	Mercury
382,280 tons	200 tons	69 tons	27 tons	2.77 lbs.



You can participate in Minnesota Power's energy conservation programs.

Visit mnpower.com/ProgramsRebates or call 218-355-2843.



AN ALLETE COMPANY

mnpower.com

1-800-228-4966

Where You Can Learn More

The Minnesota Public Utilities Commission requires electric utilities to provide customers with information on the costs, reliability and air emissions related to the fuels used to generate electricity.

MINNESOTA POLLUTION CONTROL AGENCY

Visit www.pca.state.mn.us, or call 651-296-6300 or 800-657-3864 for additional information about air emissions.

DEPARTMENT OF COMMERCE

Visit www.mn.gov/commerce, or call 651-539-1886 or 800-657-3710 for more ideas on saving energy.